Sugar Pine Dam Radial Gates Installation EIS
Public Scoping Document

1. Overview

Foresthill Public Utility District (Foresthill) has submitted an application to the Tahoe National Forest (TNF) to amend its Special Use Permit (Permit) for the Sugar Pine Dam and Reservoir Project (Sugar Pine Project). The Permit amendment is (1) to increase municipal water storage capacity by installing radial gates in the existing spillway of the dam to achieve the Sugar Pine Project's full potential water storage capacity and (2) to implement project design features and mitigation measures to offset associated impacts to National Forest System (NFS) resources.

Construction of the existing Sugar Pine Project was completed by the U.S. Bureau of Reclamation (Reclamation) in 1983 as part of the Central Valley Project pursuant to a water right approved by the State Water Resources Control Board in 1967. The existing reservoir occupies approximately 160 acres. In 1985, Reclamation entered into an agreement with the TNF for administration of NFS and Reclamation resources, including recreation facilities, at the Sugar Pine Project site (1985 Agreement). Pursuant to the Sugar Pine Dam and Reservoir Conveyance Act of 2000 (Public Law 106-566), the United States, in 2003, conveyed the Sugar Pine Project, its water right, rights and responsibilities of Reclamation under the 1985 Agreement and other interests to Foresthill. In 2003, the Forest Service issued the Permit authorizing use and occupancy of public lands to Foresthill for the dam, reservoir and appurtenant facilities consistent with requirements of Public Law 106-566.

The spillway for Sugar Pine Dam was originally designed by Reclamation to accommodate potential installation of the proposed radial gates to increase water storage capacity of the reservoir. Installation of the radial gates would flood approximately 44 additional acres by raising the reservoir's maximum water surface elevation by 20 vertical feet to an elevation of 3,638 feet above sea level, which would increase the reservoir's storage capacity by approximately 57% to 10,872 acre-feet (AF), up from the existing capacity of 6,922 AF. Since installation of the proposed radial gates and the associated environmental effects have not previously been analyzed pursuant to the requirements of the National Environmental Policy Act (NEPA), the TNF is initiating preparation of an Environmental Impact Statement (EIS) to consider the environmental effects of Foresthill's application for a Permit amendment. The EIS will be prepared as a joint document in conjunction with Foresthill's preparation of an Environmental Impact Report (EIR) for an extension to their water right permit number 15375 pursuant to requirements of the California Environmental Quality Act (CEQA). Public scoping for the EIR portion of the document under CEQA was completed by Foresthill in 2015.

The entire dam, reservoir and surrounding basin are located entirely on NFS lands. In support of the Sugar Pine Project, Reclamation acquired for the United States several parcels of private land comprising a total of approximately 700 acres within and adjacent to the Project site. 380 of these acres were acquired as wildlife mitigation for permanently impacted habitat and 320 acres were acquired for siting the dam, reservoir and appurtenances; portions of the 320 acres acquired

for project construction remain unencumbered by infrastructure and provide additional wildlife habitat and recreation resource values in the reservoir basin. The wildlife mitigation lands were intended to offset permanent impacts from construction of the original 160 acre reservoir and appurtenances, without radial gates installed (Sugar Pine Dam, Reservoir and Conduit Final Environmental Statement, pp. 33, 37, 50). Management jurisdiction for the acquired lands was subsequently transferred to the TNF.

In addition to construction of the dam, Reclamation developed several recreation facilities adjacent to the reservoir as part of the project including: two family campgrounds, a group camp, a day use area, a swimming beach, a boat ramp and a multi-use trail. Pursuant to the 1985 Agreement, the above recreation improvements were transferred from Reclamation to TNF management upon their construction. Since that time the TNF has made additional investments in recreation facility infrastructure in the area, such as surfacing and dedication of the accessible Joshua M. Hardt Memorial Trail. Based on visitor use and recreation fee revenue data collected from the reservoir campgrounds and day use area by the TNF, the recreation facilities at Sugar Pine Reservoir have become some of the most popular on the entire TNF.

Foresthill has indicated that the additional water storage capacity which would be achieved by installing the radial gates is necessary to ensure a reliable long-term water supply for the community of Foresthill under the Foresthill Divide Community Plan (Foresthill Community Plan) that the County of Placer approved in 2008. The water supply impacts analysis in the Environmental Impact Report (EIR) certified for the Foresthill Community Plan concluded that installation of the radial gates and the associated increase in water storage would avoid significant water supply impacts by ensuring adequate supplies to implement full build-out under the Foresthill Community Plan despite anticipated climate change and droughts.

Foresthill has also indicated that prior to full implementation of the Foresthill Community Plan, stored water from the Sugar Pine Project may be transferred under short-term contracts to reduce water shortages in downstream communities or for other beneficial purposes. For example, Foresthill transferred 2,000 AF of stored water in 2015 for use to reduce water shortages in communities served by the Santa Clara Valley Water District.

The Sugar Pine Project is located on the American River Ranger District of the TNF within portions of Sections 13 and 24, T15N, R10E and Sections 18 and 19 T15N, R11E, Mt. Diablo Meridian and situated on North Shirttail Creek approximately 9 miles north of the community of Foresthill. See the project map, Appendix A-1. It is within the Sugar Pine Management Area according to the Tahoe National Forest Land and Resources Management Plan (Forest Plan, 1990), as amended.

2. Purpose and Need

Applications for use and occupancy of NFS lands are required to be consistent with the Forest Plan. The TNF's purpose in responding to Foresthill's Permit amendment application is to achieve Forest Plan desired conditions for issuance of permits, or permit amendments by assuring such uses maximize public benefits and impacts to NFS resources are mitigated (Forest Plan, p. V-10). The Forest Plan recognizes the importance of Sugar Pine Reservoir as a

municipal water supply and describes the future potential for installation of radial gates in the existing spillway of the dam (Forest Plan, p. V-489). The Forest Plan emphasizes recreation management for the Sugar Pine Reservoir basin in conjunction with other uses (Forest Plan, p. V-490).

The TNF needs to respond to Foresthill's application in order to comply with Title V of the Federal Land Policy Management Act and related Forest Service land use regulations. Amendment of the permit to authorize installation of the radial gates would be consistent with provisions of the Public Law 106-566 which require that changes in use or operation of Sugar Pine reservoir facilities comply with all applicable laws and regulations at the time of the changes. Foresthill proposes to increase the water storage capacity of Sugar Pine Reservoir to ensure the availability of a reliable long-term water supply for existing development and planned future land uses within the existing water right place of use for State Water Resources Control Board Permit Number 15375 and the Foresthill Community Plan. The additional water storage provided by the proposed project is also intended to enhance water supply reliability needed to protect Foresthill from a prolonged drought; climate change concerns and state initiatives to increase water storage in California are other factors which support the need for action on Foresthill's requested permit amendment.

Prior to full implementation of the Foresthill Community Plan, or build-out, Foresthill may continue to carry out short term water transfer contracts of stored reservoir water to reduce water shortages in downstream communities, to provide ecological benefits or for other beneficial uses consistent with the California Water Code and State Water Resources Control Board's water transfer program. Foresthill used revenue generated from a 2015 water transfer to help fund replacement of an aging storage tank used to provide potable water for the Foresthill community and to maintain water system pressure necessary to comply with state requirements for firefighting; revenue generated by Foresthill from future water transfers may be used to fund similar water system infrastructure projects.

3. Proposed Action

The proposed action is to amend Foresthill's existing Permit to authorize an increase the size and water storage capacity of the reservoir. The proposed action has four components: 1) installation of radial gates in the spillway of the existing dam, 2) changes in reservoir operations, 3) timber harvest and hazard tree abatement involving one to two million board feet (mmbf) of timber on lands affected by the project and 4) implementation of project design features and mitigation measures to avoid, minimize or compensate for projected impacts to NFS recreation and habitat resources; including replacement of recreation facilities affected by inundation of additional NFS lands. The components of the proposed action are described below.

Radial Gates Installation and Construction Activities

The existing concrete spillway was originally designed and constructed to receive radial gates and raise the maximum water level in the reservoir by 20 vertical feet and increase the footprint and maximum surface area of the reservoir by approximately 44 acres. Other than installation of the radial gates, no further modifications to the spillway or dam are anticipated. Radial gate

installation will be accomplished in three phases: 1) Pre-installation site preparation, 2) gate installation, and 3) site cleanup and equipment removal.

Pre-installation site preparation: The spillway at Sugar Pine Dam was designed and constructed with a 3-foot-wide center pier to accommodate the future installation of radial gates. Stainless steel sill beams and side rubbing plates are currently in place, as are the concrete anchors to which the trunnion arm brackets of the radial gates will attach. Pre-installation activities within the spillways will be limited to debris removal and cleanup of the sill beams and side rubbing plates. These activities will not require traffic control at the dam or access restrictions to the dam parking lot. The dam parking lot will serve as the temporary staging area for gate installation. Prior to the start of installation activities, it may be necessary to remove fencing that currently restricts public access to the spillways. Prior to the start of construction activities, one or two portable toilets will be placed in the staging for use by construction personnel.

Gates Installation: Both radial gates will be transported to the dam site fully assembled with side and bottom seals in place and the trunnion, gate arms, brackets, pins and bearings already installed on the gate assembly. Once in place, each gate will be operated by a hoist assembly. The hoist assembly will include a wire rope system with stainless steel cables (one per side of each gate), machine grooved drums, drum support bearings, cross shaft, couplers, main gear box, electric motor and brake. Each hoist assembly will be mounted on a bridge that will span the spillway. Both radial gate assemblies and both hoist assemblies will be transported to the staging area at the dam by truck. In addition, one crane will be transported to the site to accommodate gate installation and placement of the hoist assemblies. Transport of gates, hoist assemblies, and crane may require traffic management activities and/or temporary road closures. With equipment and materials in place at the project staging area, installation of the gates and hoist assemblies is expected to take three (3) to five (5) days. Each gate will be lowered into place by crane and the gate trunnion attached to the existing concrete anchors. After both gates are in place, the hoist assemblies will be lowered into place. The hoist assembly bridge will then be attached to the top of the spillway walls. With hoist assembly installation complete, the hoist cables will be attached to each side of the radial gates. The final step of gate/hoist installation will be to provide each hoist with electrical power from facilities currently in place at the dam site.

Site Cleanup and Equipment Removal: Following installation of radial gates and hoist assemblies, all construction equipment and materials will be collected and removed from the project site. Any fencing that was removed to accommodate gate installation will be reinstalled. The parking area will be returned to pre-project conditions.

Reservoir Operations

The operation of Sugar Pine Reservoir is currently subject to the direction and guidance contained in several key documents, including: Public Law 106-566 (Appendix D), the 1985 Memorandum of Agreement between the Bureau of Reclamation and the Tahoe National Forest (Appendix E), the 2000 agreement between Foresthill and the Tahoe National Forest (Appendix

F), Foresthill's State Water Right Permit Number 15375 (Appendix G), the 1967 Memorandum of Agreement between the Bureau of Reclamation and the California Department of Fish and Game (Appendix H), the Permit issued by the TNF authorizing use and occupancy of NFS lands (Appendix I) and the California Water Action Plan (Appendix J). The following descriptions of reservoir operations were developed to comply with applicable direction and guidance.

With installation of the radial gates and increased storage capacity in Sugar Pine Reservoir, operation of the reservoir would change relative to historic conditions experienced since construction of the dam. Once construction is completed, Sugar Pine Reservoir would have the ability to store an additional 3950 AF for a total of 10,872 AF compared with 6,922 AF currently. Average annual inflow to the reservoir is approximately 14,000 AF — the reservoir has filled and spilled each year during the recent drought — so it is likely that the reservoir would fill in the first year following the installation of the gates. Filling the new storage space would reduce water that would have otherwise spilled down North Shirttail Canyon Creek. Current minimum flow requirements for releases to Shirttail Creek downstream of the dam that are contained in Foresthill's existing water right would remain unchanged under the proposed project.

In accordance with guidance from the 2014 California Water Action Plan and subsequent updates, Foresthill began participating in water transfers using surplus stored water in 2015. Prior to full build-out of the Foresthill Community Plan, the additional stored water arising from the proposed project could be transferred on a short-term basis. To accommodate these transfers, surplus water would be released from Sugar Pine Reservoir to Shirttail Creek for storage in, or delivery through, Folsom Reservoir. That water would be diverted from Folsom or released to the American River for downstream consumptive use and/or to meet ecological water needs.

Foresthill's long-term plan is to secure the water supply necessary to meet the anticipated growth within the service area. As build-out under the Foresthill Community Plan occurs, more reservoir water will be delivered for consumptive use each year, which will result in more dynamic reservoir water levels (i.e., a larger "bathtub ring") — particularly during the spring-to-fall dry season, when water demand within Foresthill peaks every year. Until that time, Foresthill may have the opportunity and desire to use the surplus storage to support water transfers. When transfers occur, the resulting operation may draw the reservoir down to the minimum recreation pool during the peak recreation season (May to September). Releases in support of transfers will likely occur in the late spring and be completed by June 1 or may be delivered gradually over the summer months, depending upon the purpose of the transfer. The storage space created by the transfer would be refilled during the following winter and spring runoff period, reducing reservoir spills and instream flows compared to the current operation. Releases to meet the current minimum flow requirements would not change. If Foresthill chooses not to participate in future water transfers, storage levels may be approximately 20 feet higher than current operations until local demands increase.

Foresthill's water right permit authorizes direct diversion of up to 18 cubic feet per second (cfs). In addition, Foresthill may divert to storage up to 15,400 AF (AF) annually. The season of diversion for both is November 1 to July 1. Total authorized diversion and use is 24,076 AF annually. Between July 1 and November 1, Foresthill relies on re-diversion of Sugar Pine

Reservoir storage to meet consumptive demands. In recent years average consumptive demands with Foresthill's service area have averaged about 1,200 AF per year.

Currently, the water right permit requires compliance with the January 26, 1967, Memorandum of Agreement with the Department of Fish and Game for the Protection and Preservation of Fish and Wildlife and Recreational Resources of North Shirttail Canyon Creek (MOA), which includes minimum release requirements and minimum pool requirements as follows:

- 5 cfs or natural inflow from February 1 to May 31, whichever is less;
- 2 cfs or natural inflow from June 1 through January 31, whichever is less; and
- A minimum of 0.5 cfs at all times, regardless of the natural inflow.
- 3,560 AF during the recreation season from May 1 through September 30, subject to District water use; and
- At no time should Foresthill maintain a minimum pool less than 1,100 AF of water.

The TNF may take up to 50 AF per year from the reservoir for water-based public recreation uses, including dust abatement on roads, and for fire control, and may use the existing power and water system located at the Dam.

The reservoir has two boat ramps: An upper boat ramp that operates at water level elevations down to 3,590 feet (3,159 AF of water storage), and a lower boat ramp that operates at water level elevations down to 3,565 feet (1,106 AF of water storage).

Transfer volumes are limited by anticipated District water demand, the minimum pool requirements specified in the 1985 Agreement and 1967 MOA, and fishery flow releases specified by the MOA. Operational considerations for potential transfers under various conditions are described below:

Wet-Year Transfer Operations. Sugar Pine Reservoir fills and spills in most years. Under those circumstances, Foresthill will attempt to transition from the spill event to the transfer water release rates. Transfer water release rates will remain within the range of historic release rates from the reservoir. The purpose is to provide a smooth transition from uncontrolled spill to a controlled release. In years when Folsom Reservoir is also spilling, the transfer release will need to be delayed until the Bureau regains control of Folsom releases, so that Sugar Pine Reservoir transfer water is not spilled at Folsom. Once most of the transfer water is released from the Sugar Pine Reservoir, the remainder of the transfer water will be released over a three- to four-day period to ramp down to the minimum fishery flow release specified by the MOA. The ramp down from the transfer release rate should be no more than half the release rate from the previous day or 10 cfs, whichever is greater. For example, if a transfer release rate is 60 cfs, the release rate for the first day of the ramp down must be at least 30 cfs, followed by 15 cfs, followed by 5 cfs.

Dry-Year Transfer Operations. In a dry year when Sugar Pine Reservoir does not spill, Foresthill will use the transfer water to ramp up from the minimum flow requirement to the calculated transfer flow rate, then ramp down to the minimum flow requirement to provide a smooth transition from minimum flow to transfer rates and back down again. Ramp rates up to

the transfer rate will be the maximum of 10 cfs per day or double the previous day release rate, whichever is greater. Ramp rates down to the minimum flow requirement will be no more than half the release rate from the previous day or 10 cfs, whichever is greater.

Refill Operations. After a transfer, Foresthill will seek to refill Sugar Pine Reservoir as soon as possible, while making fishery flow releases specified in the MOA. As the reservoir fills, Foresthill will monitor Folsom Reservoir operations to identify whether Folsom Reservoir meets the conditions specified in the transfer's refill agreement. If the conditions are met, Foresthill may return to normal Sugar Pine Reservoir operations. If the conditions are not met, Foresthill will need to release to Folsom Reservoir an amount of Sugar Pine Reservoir water equal to the Folsom Storage Deficiency caused by the transfer.

Other operational considerations. Foresthill must consider potential growth within the service area as it develops plans for the future. As part of that process, Foresthill anticipates the need for additional storage capacity at Sugar Pine Reservoir. Installation of two radial gates will increase storage capacity from 6,922 AF to 10,872 AF. If Foresthill installs the radial gates, there may be opportunities to execute water transfers while water supply is in excess of local consumptive demand. The following list includes operational considerations that would be evaluated in determining annual operations.

- Hydrology
- Local consumptive demand
- Current storage capacity (existing facility)
- Increased storage capacity (installation of radial gates)
- Potential Water transfer opportunities
- Maximizing reservoir recreation opportunities whenever possible

These considerations will demand flexibility in Sugar Pine Reservoir operations to best serve the interests and needs of Foresthill as well as conservation of NFS resources, including recreation opportunities. As the local demand increases, the opportunity for water transfers will decrease because of reduced water supply availability. The study result completed for the 2008 Foresthill PUD Master Plan indicate that the March 1975 – March 1978 is the critical period for the project. If a repeat of this hydrology occurred when the local consumptive demands reach the projected build out, transfer opportunities will be limited. Until the consumptive demand reaches full build out, there will be opportunities to transfer stored Sugar Pine Reservoir water both with and without radial gates installed. The draw down schedule for any particular year will be dependent upon the combination of operational considerations in the bulleted list above.

Timber Harvest and Vegetation Management Activities

Inundation area: Clear-cut and remove all trees, shrubs and biomass with stems 1 inch or greater below the proposed new high water line for the reservoir in an area approximately 44 acres in size. Narrow strips of small trees, shrubs and biomass may be left in place along North Shirttail and Forbes Creek stream channels to provide structural fish habitat after inundation. A combination of ground based, end-lining, and cable equipment will be used. Logging equipment

will access the project area through the reservoir recreation facilities where possible; approximately two miles of temporary road would be constructed to facilitate logging operations as needed.

Approximately 9 acres of the inundation area is situated on slopes greater than 35%; in these locations logging operations would require construction of bench cut skid trails to facilitate access for mechanical harvesting equipment. Where possible the bench cut would be located on the existing accessible and multi-use trails, which would later be inundated below the new high water line. Approximately 34 acres, which is the majority of the inundation area, is situated on slopes less than 35% and skid trails in these areas would not require bench cuts to facilitate access by feller-bunchers and rubber tired skidders. Landings and skid-trails will be located below the new high-water mark where possible, and upon completion of vegetation removal, slopes would be re-contoured as needed.

Stumps greater than 8 inches diameter would be removed and disposed of off-site; some stumps may be used for project related stream restoration mitigation measures.

Manzanita Day Use Area, the boat ramp parking area and other reservoir recreation facilities may be used for landings or staging during timber harvest operations and would be repaired as needed upon project completion.

Hazard Tree Abatement: Hazard trees that pose risks to recreation facilities relocated or reconfigured as a result of the proposed action would be abated as described below and displayed in Table 1. Abatement of hazard trees will be conducted within 150 feet of the relocated alignment of the Joshua M. Hardt accessible trail, Sugar Pine multi-use trail as well as reconfigured campgrounds and other day use facilities (relocation and alteration of recreation facilities is described in the subsequent section of the document *Projected Impacts, Project Design Features and Mitigation Measures*). The hazard tree treatment area is approximately 110 acres; hazard trees would be cut using directional felling; end-lining from a skidder below would pull the trees downslope for removal through the clear-cut inundation area. Furrows created during tree removal would be filled in and re-contoured to match the existing slope as needed, particularly on steeper slopes.

For the affected campgrounds, day use area, parking areas, boat ramp and other locations where public occupancy would be expected to be stationary for extended periods of time, all hazard trees would be removed consistent with direction according to the *Hazard Tree Guidelines for Forest Service Facilities and Roads in the Pacific Southwest Region* (USDA Forest Service, 2012). Stumps from hazard trees would be flush cut and treated with a borate compound to prevent spread of annosus root disease.

Fuels Treatments: Treatments would consist of ground based harvest, whole-tree yarding of activity fuels and removal of most non-activity fuels to landings for chipping and removal off-site or used on site if needed to meet any mitigation requirements for soil cover. Landings and piles should be designed and located to facilitate biomass chipping and removal.

Recreation Closures: All reservoir public access and reservoir recreation facilities, including the campgrounds, day use area, trails and boat ramp would be subject to closure to protect public health and safety during vegetation management operations. Closures could remain in effect for several months during the recreation season.

Projected Impacts, Project Design Features and Mitigation Measures

A number of projected environmental impacts have been identified by TNF staff during consultation with Foresthill and internal agency scoping prior to completion of resource surveys and initiation of public involvement. In order to comply with Forest Plan direction, the terms and conditions of Foresthill's current Permit and other laws, regulations and policies governing management of NFS lands and resources, a variety of project design features and mitigation measures are proposed by the TNF to offset projected environmental impacts of the project. Based on planned and in progress resource surveys and public input as the environmental analysis progresses, potential environmental effects of the proposed action will be analyzed in detail during the EIS/EIR process and additional project design features to protect resources and offset impacts will be developed as needed. Mitigation ratios and locations for proposed habitat mitigation measures will also be fully described and analyzed in the EIS/EIR. Initial proposed project design features and mitigation components of the proposed action which respond to projected impacts are described below in Table 1. More detailed information on proposed replacement recreation facilities, including preliminary recreation facility design drawings (Appendix B) and design narrative (Appendix C), are attached and incorporated as part of this document.

Table 1. Initial Proposed Project Design Features and Mitigation Measures Responding to Projected Impacts.

Resource Value	Projected Impacts	Proposed Project Design Features and Mitigation Measures
Recreation Trails	**A**. Recreation Trails and related facilities would be inundated or affected: Joshua Hardt Accessible Trail (2.8 miles), Sugar Pine Multi-Use Trail (1.5 miles), Trail Bridge on N. Shirttail Creek and Trail Bridge on Forbes Creek, Interpretive Displays, and Seating Benches.	**A1**. Reconstruct the paved accessible and multi-use trail upslope of existing trails above new high water line. **A2.** Relocate accessible trail terminus from the end on the lower loop road in Giant Gap CG to the entrance to Giant Gap Campground because of siting limitations within the campground. **A3**. Decommission existing accessible paved trail sections by ripping and/or grinding up asphalt. Remove asphalt material entirely within 300 ft. of recreation facilities for aesthetics. **A4**. Relocate and/or replace as needed 10 existing interpretive displays and narratives. **A5**. Relocate and/or replace 12 existing

Resource Value	Projected Impacts	Proposed Project Design Features and Mitigation Measures
		benches to similar location along new trail alignments. **A6**. Relocate or reconstruct N. Shirttail Creek trail bridge above new high water line. **A7**. Reinforce bridge abutments on Forbes Creek trail bridge to protect from partial inundation. **A8**. Hazard Tree mitigation 150 ft. upslope of new trail alignments. **A9.** Short segments of existing trails which would not be inundated by the project totaling approximately ¼ miles would be used as part of the new alignment wherever possible.
	B. The quality of the recreation experience along the trails would be affected: 1) Relocation of the trail south of Manzanita Day Use Area would result in a change in character of the trail with the proposed alignment changing from partially shaded to exposed in sparsely vegetated serpentine soils and outcroppings and 2) Reservoir operations after installation of the radial gates resulting in a more dynamic shoreline and bathtub ring view as well as periodically greater distances from the trail to access reservoir waters.	**B1**. Relocation of benches to shaded areas with interesting views and scenic quality will help offset losses of some trail attributes. **B2**. Interpretive display describing the importance of serpentine habitat for rare plants would highlight this new section of trail. **B3**. Shade structures at two relocated picnic sites at Manzanita Day Use Area would help offset the lack of shade along the relocated section of trail through the exposed serpentine soils and outcrops adjacent to N. Shirttail Creek.
Campgrounds	C. Portions of Giant Gap and Shirttail Creek campgrounds would be affected by inundation.	**C1.** Decommission 700 ft. of the lower loop road and six campsite parking areas in Giant Gap CG and one campsite parking area in Shirttail CG. **C2.** Reconfigure 300 ft. of roadway in Giant Gap CG to connect the lower loop road with the upper loop road. **C3**. Relocate six campsites/parking spurs (including one host site and associated improvements) affected in Giant Gap CG and one campsite in Shirttail CG. For specific details see the revised recreation facility design narrative and drawings, Appendix B. **C4**. Replace one double vault toilet

Resource Value	Projected Impacts	Proposed Project Design Features and Mitigation Measures
		with two single vaults to better serve reconfigured CG. **C5**. Hazard Tree mitigation in campgrounds associated with relocation of facilities.
Manzanita Day Use Area	**D.** Portions of Manzanita Day Use Area would be inundated or affected.	**D1.** Relocate nine single picnic sites and one double picnic site. **D2.** Resurface / repair pavement as needed after timber harvest operations.
	E. Increased density of picnic sites because of inundation and topographical limitations, and loss of trees with the new reservoir footprint would adversely affect the recreation setting.	Measure **B1** and **B3** above would help mitigate this impact as well by providing scenic seating and shade nearby but outside the existing footprint of Manzanita Day Use Area.
Boat ramp	**F.** The boat ramp, boat ramp access road and parking would be inundated or affected.	**F1.** Boat ramp, boat ramp access and parking would be reconfigured to accommodate new high water line. F**2.** Hazard tree mitigation around reconfigured facilities. F**3**. Paved surfaces at the boat ramp and parking area to be repaired and/or resurfaced after timber harvest operations as needed.
Potable Water Supply Line	**G.** The potable water supply line to Giant Gap and Shirttail Creek Campgrounds and Manzanita Day Use Area would be partially inundated.	**G1.** Relocation of affected portions of water supply line totaling approximately 1.25 miles of pipeline and fixtures.
Small Boat / Swimming Access	**H.** Muddy shoreline from potential future transfers or increased demand from growth would affect access to reservoir waters for small boats and swimmers at recreation sites.	**H1.** Mitigation measures to be developed during the EIS process to facilitate access to reservoir waters during muddy shoreline conditions. Options may include hard surfaced access routes and/or installation of portable floating docks to facilitate water access.
	I. The scenic and popular island adjacent to Manzanita Day Use Area would be affected by inundation and from falling water levels under more dynamic reservoir operations.	Measures **A1** to **J1** strive to maintain a high quality recreation setting as much as possible by replacing and adding recreation amenities to offset project impacts.

Resource Value	Projected Impacts	Proposed Project Design Features and Mitigation Measures
Visual Quality and Recreation Setting	**J.** Stumps remaining after clear cut of timber below new high water line would degrade visual quality of the reservoir and pose a safety hazard for reservoir recreation users. The existing conditions are that very few stumps remain below the high water line as nearly all were removed during construction of the reservoir.	**J1.** Remove from site all stumps 8-inches diameter or more; flush cut stumps less than 8 inches. (some of the stumps to be removed may be used for habitat improvements in N. Shirttail and Forbes Creeks)
	K. The recreation setting and character of Sugar Pine Reservoir would be improved by a larger reservoir at full pool; however, the recreation character and setting would be periodically affected negatively by more dynamic reservoir operations and changing water levels as a result of the proposed action. The setting would shift from a natural appearing lake-like environment with a largely static water line immediately adjacent the tree line to an exposed "bath-tub ring" shoreline on a periodic basis.	**K1.** Some adverse effects to the recreation setting are unavoidable with the proposed changes in reservoir operations. Mitigation measures **A1**. to **J1** above strive to maintain a high quality recreation setting as much as possible by replacing and adding recreation amenities to offset project impacts.
Habitat, Botanical and Biomass Resources (See map of permanently impacted habitat and vegetation, Appendix A-2)	**L.** Permanent loss of habitat, biomass productivity and carbon storage of approximately 37.1 acres of Forest Vegetation and habitat for the California Spotted Owl (Forest Service Sensitive).	**L1.** Restoration of forest habitat for the California Spotted Owl to consist of hand thinning of material less than 6 inches dbh and prescribed burning. Location of restoration treatments and mitigation ratio for restoration of existing habitat to 37.1 acres of permanently lost habitat will be determined during the course of the EIS analysis.
	M. Permanent loss of habitat for approximately 1.6 acres of Emergent Riparian Vegetation.	**M1.** Restoration of existing off-site habitat. Location, activities and mitigation ratios to compensate for loss of 1.6 acres of emergent vegetation to be determined.
	N. Permanent loss of approximately 6.4 acres of Montane Chaparral habitat, including serpentine soils.	**N1.** Restoration of existing off-site habitat. Location, activities and mitigation ratios to compensate for loss of 6.4 acres of Montane Chaparral habitat to be determined.

Resource Value	Projected Impacts	Proposed Project Design Features and Mitigation Measures
	O. Permanent loss of approximately 2000 feet of stream habitat in N. Shirttail and Forbes creeks, including habitat for foothill yellow-legged frog (Forest Service Sensitive) and rainbow trout spawning. Suitable habitat for California red-legged frog is located in this area (Federally Threatened Species).	**O1.** Restoration of existing off-site stream habitat. Location, activities and mitigation ratios to be determined during the EIS analysis. **O2.** The proposed action would leave localized strips of non-merchantable biomass untreated at stream inlets to enhance lacustrine habitat.
	P. Habitat for resident populations of foothill yellow legged frog (Forest Service Sensitive) and rainbow trout habitat below Sugar Pine Dam would likely be affected. Suitable habitat for California red-legged frog is located in this area (Federally Threatened Species).	**P1.** Mitigation and/or monitoring needs to be determined during the course of the EIS analysis.
Cultural Resources	**Q.** Cultural resource sites would be inundated or affected.	**Q1**. The project area will be surveyed for cultural resources and all sites will be evaluated for eligibility for listing on the National Register of Historic Places. **Q2**. If any sites are found eligible for listing on the National Register, site specific mitigation measures will be developed consistent with requirements of the National Historic Preservation Act.
Public Safety	**R.** All reservoir recreation facilities would be subject to closure for up to several months during timber harvest and recreation facility reconstruction operations for public safety.	**R1.** Public outreach and notification of closures would be made several months in advance and continue for the duration of closures to minimize impacts on the recreating public and maintain public safety.

References

Placer County, Foresthill Divide Community Plan, 2008.

USDA Forest Service, Tahoe National Forest Land and Resource Management Plan (as amended), 1990.

USDI Bureau of Reclamation, Sugar Pine Dam, Reservoir and Conduit Final Environmental Statement, 1975.

Appendices

Appendix A	--	Maps, A-1 and A-2
Appendix B	--	Recreation Facility Design Drawings
Appendix C	--	Recreation Facility Design Narrative
Appendix D	--	Public Law 106-566, Sugar Pine Dam and Reservoir Conveyance Act of 2000
Appendix E	--	1985 MOA between Bureau of Reclamation and Tahoe National Forest
Appendix F	--	2000 Agreement between Foresthill PUD and Tahoe National Forest
Appendix G	--	Water Right Permit 15375
Appendix H	--	1967 MOA between Bureau of Reclamation and California Dept. of Fish and Game
Appendix I	--	Foresthill PUD's Special Use Permit with Tahoe National Forest.
Appendix J	--	California Water Action Plan (2016 update)